

second copper alloy, consists of Cu crystals, and at least a portion of said first aluminum alloy, except for the second aluminum alloy, consists of Al crystals.

B3 25. (Twice Amended) A flame-sprayed copper-aluminum composite material according to claim 1, characterized by further containing 30% by weight or less of one or more selected from the group consisting of Al_2O_3 , SiO_2 , SiC, ZrO_2 , Si_3N_4 , BN, AlN, TiN, TiC, B_4C , iron-phosphorus compounds, iron-boron compounds, and iron-nitrogen compounds.

26. (Twice Amended) A flame-sprayed copper-aluminum composite material according to claim 1, wherein it is laminated on a substrate and is coated with a metal layer which is softer than the substrate.

B4 30. (Amended) A method for producing a copper-aluminum composite material, comprising flame-spraying material containing powder of copper or copper alloy and

powder of aluminum or aluminum alloy such that a portion of these powders is melted and a portion is not melted.

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33. (Amended) A method for producing a copper-aluminum composite material according to claim 30 or 31, wherein 30% by weight or less of graphite powder is mixed with the material prior to flame-spraying.

34. (Twice Amended) A method for producing a copper-aluminum composite material according to claim 30 or 31, wherein 30% by weight or less of one or more selected from the group consisting of Al_2O_3 , SiO_2 , SiC , ZrO_2 , Si_3N_4 , BN , AlN , TiN , TiC , B_4C , iron-phosphorus compounds, iron-boron compounds, and iron-nitrogen compounds is mixed with the material prior to flame-spraying.

35. (Amended) A method for producing a copper-aluminum composite material according to claim 30 or 31, wherein the flame spraying is carried out on a surface of a metallic substrate, the surface of the metallic substrate having been roughened to Rz 10-60 μm prior to flame spraying.

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